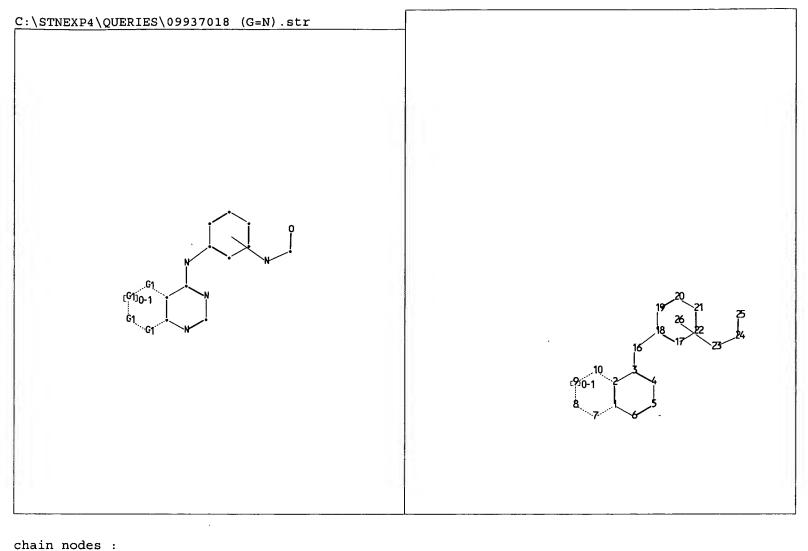
L Number	Hits	Search Text	DB	Time stamp
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		(544/279) or (544/280) or (514/234.2) or	EPO; JPO;	
		(514/260.1) or (514/262.1) or (514/263.4) or	DERWENT	
		(514/264.11)).CCLS.		
2	3200892	2002.py. or 2003.py.	USPAT;	2003/09/23 10:43
			US-PGPUB;	
			EPO; JPO;	
			DERWENT	ŀ
3	553	(((544/117) or (544/118) or (544/258) or	USPAT;	2003/09/23 10:43
		(544/262) or (544/278) or (544/277) or	US-PGPUB;	
		(544/279) or (544/280) or (514/234.2) or	EPO; JPO;	
		(514/260.1) or (514/262.1) or (514/263.4) or	DERWENT	
		(514/264.11)).CCLS.) and (2002.py. or		
		2003.py.)		



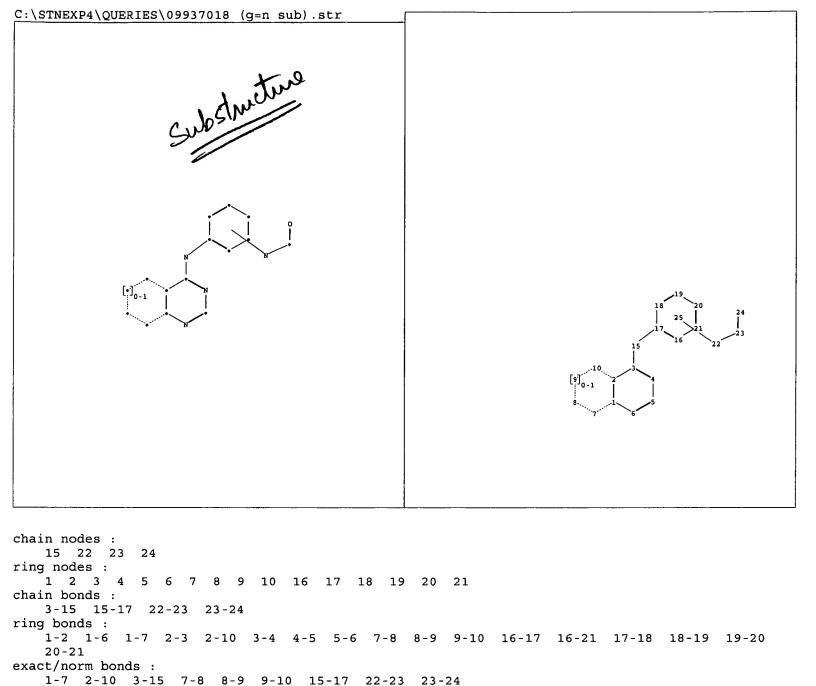
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16 23 24 25
ring nodes:
    1 2 3 4 5 6 7 8 9 10 17 18 19 20 21 22
chain bonds:
    3-16 16-18 23-24 24-25
ring bonds:
    1-2 1-6 1-7 2-3 2-10 3-4 4-5 5-6 7-8 8-9 9-10 17-18 17-22 18-19 19-20 20-21 21-22
exact/norm bonds:
    1-7 2-10 3-16 7-8 8-9 9-10 16-18 23-24 24-25
normalized bonds:
    1-2 1-6 2-3 3-4 4-5 5-6 17-18 17-22 18-19 19-20 20-21 21-22
isolated ring systems:
    containing 1:
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1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 16:CLASS

17:Atom 18:Atom 19:Atom 20:Atom 21:Atom 22:Atom 23:CLASS 24:CLASS 25:CLASS

Match level :

26:CLASS



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normalized bonds :
    1-2 1-6 2-3 3-4 4-5 5-6 16-17 16-21 17-18 18-19 19-20 20-21
isolated ring systems :
    containing 1 :

Match level :
    1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 15:CLASS 16:Atom 17:Atom 18:Atom 19:Atom 20:Atom 21:Atom 22:CLASS 23:CLASS 24:CLASS 25:CLASS
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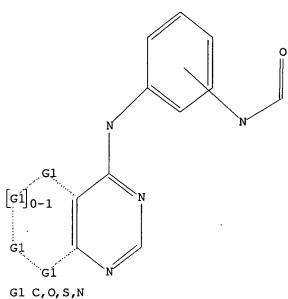
L1 STRUCTURE UPLOADED

=> d 11

L1 HAS NO ANSWERS

L1

STR



Structure attributes must be viewed using STN Express query preparation.

=> s l1 sss sam

SAMPLE SEARCH INITIATED 11:32:56 FILE 'REGISTRY' SAMPLE SCREEN SEARCH COMPLETED - 1871 TO ITERATE

53.4% PROCESSED

1000 ITERATIONS

INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:

ONLINE **COMPLETE**

BATCH **COMPLETE**

PROJECTED ITERATIONS:

34826 TO 40014

PROJECTED ANSWERS:

3 TO 254

L2

L3

3 SEA SSS SAM L1

=> s ll sss ful

FULL SEARCH INITIATED 11:46:42 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 38128 TO ITERATE

100.0% PROCESSED 38128 ITERATIONS

SEARCH TIME: 00.00.02

738 SEA SSS FUL L1

738 ANSWERS

3 ANSWERS

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1. Cytokines Balkwill, Frances Cytokines are 'mes neurotransmitters, the immune response	R ssenger proteins', s they contribute to	oluble mediators that allo a chemical signalling lan animals.	ow communication b guage that controls	etween cells. Together v development, tissue rep	with hormones and pair, inflammation and
Balkwill, Frances Virtually all insults	to the body involv	Disease M e cytokine responses, and nent of diseases is leadin			e component. An
Cyr, Richard J	nts involves nuclea	nd Cell Plate Formatior		processes ensure a stea	ady supply of new cells
Dunn, Adrian J Several mechanism may affect immuni- glands, and via the	ns by which the ne e function via direct autonomic nervol	em Interactions IIII rvous and immune system t innervation of immune is system. Cells of the imamong which cytokines a	organs, by secretion mune system may i	of hormones from the position of hormones from the position of the control of the	oituitary and other
Lutkenhaus, Joe Bacterial cell divisi	ormation of the Z eptum separating t	-	al division proteins t	o form the septal ring,	
Nath, Indira Chronic infectious	echanisms Agair	st Intracellular Pathog s are caused by microorg ular pathogens are prima	gens 圏 anisms that reside w	rithin phagocytes and ep	
7. 🖹 Vaccines: I	DNA ®				

Immunization by injection of plasmids encoding foreign proteins has been used successfully as a research tool and to elicit

protective immune responses in animal models.

Encyclopedia of Life Sciences

🗎 Vaccines: Presentation 🔠

Ertl, Hildegund CJ; Xiang, Zhi Quan; Pasquini, Susanna and K walczyk, Dariusz W

Different types of vaccine formulations selectively favour induction of the immune responses that correlate with protection to challenge with an infectious agent.

9. Acute-phase Proteins

Gabay, Cem and Kushner, Irving

Acute-phase proteins form part of the systemic acute-phase response which accompanies inflammation. Their synthesis by hepatocytes is primarily regulated by inflammation-associated cytokines and their presumed functions are highly variable and diverse.

10. BEndothelial Cells: Immunological Aspects 🖾

Mantovani, Alberto and Garlanda, Cecilia

Endothelial cells regulate the traffic and functions of leucocytes by expressing in a regulated way adhesion molecules and cytokines. They therefore engage in a complex bidirectional interaction with immunocompetent cells.

11. BHaematopoiesis B

Evans, Todd

Haematopoiesis is the process of forming blood cells, which occurs during embryogenesis and throughout normal life.

12. BImmunology of Invertebrates: Humoral B

Gupta, Avodhva P

All major groups of invertebrates possess immunocytes that perform the major cell-mediated immune functions. During massive or prolonged microbial invasion, the cellular defence may be impaired. Under such circumstances, antimicrobial proteins (humoral factors) secreted by the host immune system provide the second line of defence.

13. BInterleukins

Mire-Sluis, Anthony R

The interleukins are a group of proteins that have been classified specifically by a designated nomenclature committee of the International Union of Immunological Societies/World Health Organization. These proteins are derived, mainly, from white blood cells and act on white cells, although these criteria are not necessarily exclusive of other cell sources and activities. Interleukins, amongst other proteins, maintain the haematopoietic and immune systems, and control their functions.

14. BInflammation: Chronic B

Wakefield, Denis and Kumar, Rakesh K

Chronic inflammation may result from failure to eliminate an acute inflammatory irritant, from an autoimmune response to a self antigen, or may be caused by an innately chronic irritant of low intensity that persists. It is characterized by simultaneous inflammation and repair, with recruitment and activation of macrophages, lymphocytes and other cells triggered by the coordinated action of cytokines and growth factors.

15. 🖹 Immunoregulation 🔟

O' Shea, John J and Nutman, Thomas B

The immune system serves essential functions in protection from numerous pathogenic organisms and, in general, is not harmful to the host. The process by which the immune response is restrained or controlled is termed immunoregulation. A number of different aspects of the immune system contribute to this process of immunoregulation, some of the most important being signals from antigen-presenting cells by costimulatory molecules, the effects of cytokines and apoptotic cell death.

16. B Lymphocytes 🕾

Bondada, Subbarao and Chelvarajan, Ralph L

B (bone marrow-derived) lymphocytes are antibody-producing cells in the body. Antibody production is initiated upon

recognition of antigen via a specific immunoglobulin receptor, and reception of growth and differentiation signals. B lymphotographic lands are considered in the control of the control o	ocytes
are also important for activation of helper T lymphocytes and are integral for the memory component of the immune response	nse.

17. BImmune Response: Regulation B

Lukic, Miodrag L and Lukic, Aleksandra M

Early events in an immune response may determine the outcome of immunogenic stimulus, and molecules produced as part of an immune response – such as cytokines and antibodies – can feed back into, suppress or promote the response. Both underand overreaction to antigens may be deleterious, so the immune system requires control mechanisms at different levels so as to provide an optimal immune response at all times.

18. BLymphocyte Responses In Vitro

H dgkin, Philip Desmond

Lymphocytes can be stimulated in vitro to undergo many of the responses associated with antigen stimulation in vivo. The development of in vitro activation protocols has led to the identification of important cellular communication pathways and to a molecular description of lymphocyte function.

19. Lymphocytes: Antigen-Induced Gene Activation

Madrenas, Joaquín

Lymphocytes are generally activated upon antigen recognition by their clone–specific surface receptors. Lymphocyte activation includes multiple signalling cascades that converge in the cell nucleus to cause significant changes in the pattern of gene expression. These changes determine the cell phenotype and ultimately, the type of immune response.

Bogdan, Christian

Macrophages are an important component of the innate and adaptive immune system. Their ability to recognize, phagocytose and kill microbial pathogens is complemented by the production of a broad spectrum of pro- and anti-inflammatory cytokines.

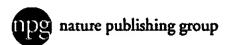
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cytokine:

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cytokine ['saitəu,kain]

noun any of various proteins, secreted by cells, that carry signals to neighbouring cells. Cytokines include interferon

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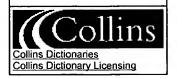
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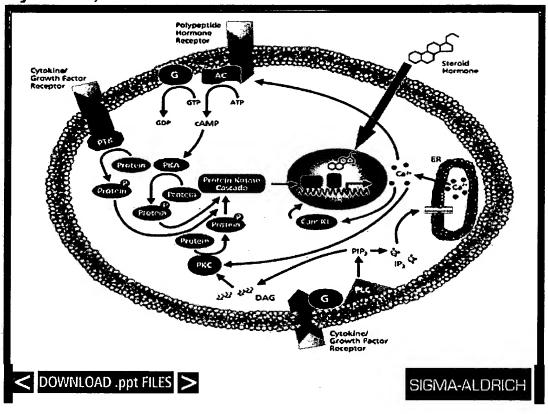
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Cytokines, Growth Factors and Hormones

Cytokines, growth factors (GF), and hormones are all chemical messengers that mediate intercellular communication. The regulation of cellular and nuclear functions by cytokines, growth factors, and peptide or protein hormones is initiated through the activation of cell surface receptors (Rc). All receptors have two main components: 1) a ligand-binding domain that ensures ligand specificity and 2) an effector domain that initiates the generation of the biological response upon ligand binding. The activated receptor may then interact with other cellular components to complete the signal transduction process. Many growth factors bind to receptors that are linked through G-proteins to membranebound phospholipase C (PLC). Activation of PLC cleaves phosphatidylinositol 4,5bisphosphate (PIP2) to form diacylglycerols (DAG) and D-myo-inositol-1, 4, 5trisphosphate (IP3). IP3 regulates intracellular Ca2+ by binding to the IP3 receptor on the endoplasmic reticulum (ER) and stimulating Ca2+ release from the ER. Free intracellular Ca2+ can bind to calmodulin, and this Ca2+-calmodulin complex, in the presence of cyclic-AMP (cAMP), activates protein kinase A (PKA) by binding to the regulatory subunit of the enzyme. DAG binds to and activates protein kinase C (PKC). Other hormone receptors may be linked through G-proteins to adenyl cyclase (AC) instead of PLC. Activation of AC increases the cellular levels of cAMP and, in the presence of the Ca2+-calmodulin complex, will activate PKA. Additionally, some growth factor and cytokine receptors are protein tyrosine kinases (PTK) that are directly activated by ligand-receptor interaction. Activation of any of the protein kinases, PKA, PKC, or PTK, catalyzes the phosphorylation of other

proteins within the cell. Enzymes that are activated or inhibited by phosphorylation may mediate functional processes within the cell, while others may be one step in a protein kinase cascade that regulates nuclear events.

Steroid hormones (i.e. estrogen, glucocorticoids), thyroid hormone, vitamin D3, and retinoids are all small lipophilic molecules that easily penetrate both the cellular and nuclear membranes to enter the nucleus where they bind to their respective receptors that are ligand-dependent transcription factors. These ligand-receptor complexes bind to specific DNA response elements in the promoter region and regulate gene expression.

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Marshall, C.J., Specificity of receptor tyrosine kinase signaling: transient versus sustained extracellular signal-regulated kinase activation. Cell., **80**,179-185 (1995).

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